STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION



| | | |
|---|---|---|
| PETITION OF THE CITY OF EVANSVILLE, INDIANA, BY ITS WATER AND SEWER UTILITY BOARD, FOR AUTHORITY TO ISSUE BONDS, NOTES, OR OTHER OBLIGATIONS, FOR AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WATER SERVICE, AND FOR APPROVAL OF NEW SCHEDULES OF WATER RATES, CHARGES, AND RULES AND REGULATIONS FOR WATER SERVICE, AND FOR APPROVAL OF ACCOUNTING AND RATEMAKING TREATMENT FOR WATER SERVICE TO REFLECT THE IMPACT OF REASONABLY FIXED, KNOWN AND MEASURABLE CAPITAL REQUIREMENTS OVER THE NEXT THREE CALENDAR YEARS | ) | CAUSE NO. 43190 |

EXHIBITS
OF
CHRISTOPHER B. GALE, P.E.

Exhibit CG-1
Exhibit CG-2
Exhibit CG-3

ON BEHALF OF PETITIONER
CITY OF EVANVSILLE, INDIANA

City of Evansville, Indiana
Cause No. 43190
Petitioners' Exhibit No. CG-1

# EVANSVILLE WATER & WASTEWATER
# 10-YEAR MASTER PLAN

(only 3 copies provided for review in attached 3-ring binders)

City of Evansville, Indiana
Cause No. 43190
Petitioners' Exhibit No. CG-2

# UPDATED PROJECT COST ESTIMATES

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Install Residuals Collection & Pumping Facility

PROJECT NO. 4

### General Description

This project involves the installation of a residuals collection and pumping facility for filter backwash & sedimentation processes to be sent directly to the wastewater treatment plant. The facility includes an interceptor sewer for conveying backwash waste and sedimentation basin residuals to a 35,000-gallon, inground lift station, where it is then pumped by dual, 24-in. diameter DI force mains to the wastewater treatment plant. An overflow structure with piping to the Ohio River will be incorporated into the final interceptor manhole for diversion of stormwater runoff to the river during rain events.

### Summary of Project Costs

| | | |
|---|---|---|
| Construction Cost Opinion Without Contingency or Markup (from page 2) | | $1,951,000 |
| Contractor Overhead & Profit Mark-up | 10% | $195,000 |
| Construction Cost Opinion Without Contingency | | $2,146,000 |
| Contingency | 15% | $322,000 |
| Construction Cost Opinion | | $2,468,000 |
| Engineering, Project Management, and Legal | 15% | $370,000 |
| **Total Project Cost** | | **$2,800,000** |

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Install Residuals Collection & Pumping Facility

PROJECT COST OPINION WORKSHEET

| ITEM | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|
| **Structural** | | | | |
| Earthwork | See Detailed Structural Worksheet, p. 3 | | | $357,100 |
| Concrete | See Detailed Structural Worksheet, p. 3 | | | $127,525 |
| Metals | See Detailed Structural Worksheet, p. 3 | | | $27,500 |
| Buildings | See Detailed Structural Worksheet, p. 3 | | | $0 |
| Demolition | See Detailed Structural Worksheet, p. 3 | | | $20,000 |
| **Process Mechanical & Control Equipment and Major Piping Systems** | | | | |
| D.I. Pipe - 16-in. diam. (buried 25 ft. dp.) | ft | 100 | $105 | $10,500 |
| D.I. Pipe - 24-in. diam. (buried 6-10 ft. dp.) | ft | 3,200 | $95 | $304,000 |
| RCP Pipe - 36 in. (>25 ft. dp.) | ft | 60 | $200 | $12,000 |
| RCP Pipe - 48 in. (>25 ft. dp.) | ft | 120 | $300 | $36,000 |
| RCP Manholes - 6 ft. diam. (30 ft. dp.) | each | 1 | $10,000 | $10,000 |
| RCP Manholes - 7 ft. diam. (30 ft. dp.) | each | 1 | $12,000 | $12,000 |
| RCP Manholes - 8 ft. diam. (40 ft. dp.) | each | 2 | $15,000 | $30,000 |
| Sluice Gates - 48 in. x 48 in. | each | 1 | $20,000 | $20,000 |
| D.I. Pipe - 16-in. diam. (exposed/flanged) | ft | 180 | $75 | $13,500 |
| Plug Valves - 16-in. diam. | each | 3 | $4,000 | $12,000 |
| Check Valves - 16-in. diam. | each | 3 | $13,000 | $39,000 |
| D.I. Fittings - 16-in. diam. (exposed/flanged) | lump sum | 1 | $25,000 | $25,000 |
| D.I. Pipe - 24-in. diam. (exposed/flanged) | ft | 40 | $100 | $4,000 |
| D.I. Fittings - 24-in. diam. (exposed/flanged) | lump sum | 1 | 16,000 | $16,000 |
| Submersible Pumps - 10,000 gpm | each | 3 | $120,000 | $360,000 |
| Level Monitoring/Control System | lump sum | 1 | $15,000 | $15,000 |
| **Special Construction** | | | | |
| Floodway reinforcement and structures (6' MH) | lump sum | 1 | $35,000 | $35,000 |
| Floodway reinforcement and structures (7' MH) | lump sum | 1 | $45,000 | $45,000 |
| Floodway reinforcement and structures (8' MH) | lump sum | 1 | $55,000 | $55,000 |
| **Sub-Total Construction Cost** | | | | **$1,586,125** |

| Total Construction Cost Percentage-Based Estimates | Assumed % of Construction Cost | |
|---|---|---|
| Process-Mechanical and Yard Piping Systems | 3% | $47,584 |
| HVAC & Plumbing | 2% | $31,723 |
| Electrical | 7% | $111,029 |
| Instrumentation | 3% | $47,584 |
| Sitework | 3% | $47,584 |
| General conditions, bonds, mobilization, and demobilization | 5% | $79,306 |

**Construction Cost Opinion Without Contingency or Markup** **$1,950,934**

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Install Residuals Collection & Pumping Facility

### Detailed Structural Worksheet

| ITEM | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|
| **Structural Detail** | | | | |
| Earthwork: Dewatering | days | **90** | $1,100 | $99,000 |
| Earthwork: Permanent Sheeting | sq ft | **5,500** | $25 | $137,500 |
| Earthwork: Tight Sheeting | sq ft | **0** | $25 | $0 |
| Earthwork: Temporary Sheeting | sq ft | **0** | $20 | $0 |
| Earthwork: Excavation | cu yds | **1,300** | $12 | $15,600 |
| Earthwork: Underdrain System | sq yds | **0** | $20 | $0 |
| Earthwork: Structural Fill | cu yds | **500** | $30 | $15,000 |
| Earthwork: Earth Fill | cu yds | **0** | $10 | $0 |
| Earthwork: Pile Foundation | sq ft | **1,000** | $90 | $90,000 |
| **Earthwork Total** | | | | **$357,100** |
| Concrete: Prep. & Rework | lump sum | **1** | $15,000 | $15,000 |
| Concrete: Footings | cu yds | **30** | $180 | $5,400 |
| Concrete: Base Slab | cu yds | **50** | $200 | $10,000 |
| Concrete: Walls | cu yds | **175** | $450 | $78,750 |
| Concrete: Floor Slabs | cu yds | **0** | $250 | $0 |
| Concrete: Structural Slabs | cu yds | **15** | $575 | $8,625 |
| Concrete: Walkways | cu yds | **10** | $350 | $3,500 |
| Concrete: Columns | cu yds | **0** | $600 | $0 |
| Concrete: Channels | cu yds | **25** | $250 | $6,250 |
| Concrete: Precast Troughs | cu yds | **0** | $200 | $0 |
| **Concrete Total** | | | | **$127,525** |
| Metals: Grating | sq ft | **300** | $35 | $10,500 |
| Metals: Aluminum Handrail | ft | **100** | $50 | $5,000 |
| Metals: Stairway | risers | **0** | $500 | $0 |
| Metals: Aluminum Geodesic Dome (round) | sq ft | **0** | $35 | $0 |
| Metals: Aluminum Geodesic Dome (rect.) | sq ft | **0** | $2,800 | $0 |
| Metals: Baffles and Weirs | ft | **0** | $25 | $0 |
| Metals: Hatches | each | **6** | $2,000 | $12,000 |
| **Metals Total** | | | | **$27,500** |
| Tank Cover | sq ft | **0** | $50 | $0 |
| Building: One-Story Building | sq ft | **0** | $60 | $0 |
| Building: Two-Story | sq ft | **0** | $140 | $0 |
| Building: Pre-engineered | sq ft | **0** | $50 | $0 |
| **Building Total** | | | | **$0** |
| Demolition: Selective | cu ft | **400** | $25 | $10,000 |
| Demolition: Structure | cu ft | **0** | $10 | $0 |
| Demolition: Mechanical | lump sum | **1** | $10,000 | $10,000 |
| **Demolition Total** | | | | **$20,000** |

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Install Dechloramination Facilities

PROJECT NO. 3

### General Description

This project involves the installation of dechloramination facilities for backwash and filter-to-waste wastewaters prior to discharge to the Ohio River. The facilities include an interceptor sewer which collects the backwash and filter-to-waste wastewaters, and diverts them to a 20,000-gallon reaction tank equipped with submersible pumps for discharge to the Ohio River under high river stages. An overflow structure is also included to divert stormwater to the Ohio River during rain events. The process wastewater will be dechloraminated using a sodium bisulfite quenching system to be housed inside a new feed building located over the influent structure.

### Summary of Project Costs

| | | |
|---|---|---|
| Construction Cost Opinion Without Contingency or Markup (from page 2) | | $1,397,000 |
| Contractor Overhead & Profit Mark-up | 10% | $140,000 |
| Construction Cost Opinion Without Contingency | | $1,537,000 |
| Contingency | 15% | $231,000 |
| Construction Cost Opinion | | $1,768,000 |
| Engineering, Project Management, and Legal | 15% | $265,000 |
| **Total Project Cost** | | **$2,000,000** |

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Install Dechloramination Facilities

PROJECT COST OPINION WORKSHEET

| ITEM | | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|---|
| **Structural** | | | | | |
| Earthwork | See Detailed Structural Worksheet, p. 3 | | | | $335,500 |
| Concrete | See Detailed Structural Worksheet, p. 3 | | | | $97,400 |
| Metals | See Detailed Structural Worksheet, p. 3 | | | | $10,425 |
| Buildings | See Detailed Structural Worksheet, p. 3 | | | | $12,000 |
| Demolition | See Detailed Structural Worksheet, p. 3 | | | | $17,000 |
| **Process Mechanical & Control Equipment and Major Piping Systems** | | | | | |
| RCP Pipe - 30 in. (>25 ft. dp.) | # | ft | 60 | $190 | $11,400 |
| RCP Pipe - 48 in. (>25 ft. dp.) | # | ft | 180 | $310 | $55,800 |
| RCP Manholes - 6 ft. diam. (30 ft. dp.) | # | each | 1 | $10,000 | $10,000 |
| RCP Manholes - 7 ft. diam. (30 ft. dp.) | # | each | 2 | $12,000 | $24,000 |
| RCP Manholes - 8 ft. diam. (40 ft. dp.) | # | lump sum | 2 | $15,000 | $30,000 |
| Sluice Gates - 48 in. x 48 in. | # | each | 2 | $20,000 | $40,000 |
| D.I. Pipe - 16-in. diam. (exposed/flanged) | # | ft | 180 | $75 | $13,500 |
| Plug Valves - 16-in. diam. | # | each | 3 | $4,000 | $12,000 |
| Check Valves - 16-in. diam. | # | each | 3 | $13,000 | $39,000 |
| D.I. Fittings - 16-in. diam. (exposed/flanged) | # | lump sum | 1 | $10,000 | $10,000 |
| D.I. Pipe - 24-in. diam. (exposed/flanged) | # | ft | 30 | $100 | $3,000 |
| D.I. Fittings - 24-in. diam. (exposed/flanged) | # | lump sum | 1 | $4,000 | $4,000 |
| Sluice Gates - 24 in. x 24 in. | # | each | 1 | $15,000 | $15,000 |
| Submersible Pumps - 5,000 gpm | # | each | 3 | $40,000 | $120,000 |
| Dechlorination System - Sodium Bisulfite | # | lump sum | 1 | $50,000 | $50,000 |
| Level Monitoring/Control System | # | lump sum | 1 | $15,000 | $15,000 |
| **Special Construction** | | | | | |
| Floodway reinforcement and structures (6' MH) | | lump sum | 1 | $30,000 | $30,000 |
| Floodway reinforcement and structures (7' MH) | | lump sum | 2 | $40,000 | $80,000 |
| | | | | | **$1,035,025** |

| Total Construction Cost Percentage-Based Estimates | Assumed % of Construction Cost | |
|---|---|---|
| Process-Mechanical and Yard Piping Systems | 4% | $41,401 |
| HVAC & Plumbing | 2% | $20,701 |
| Electrical | 10% | $103,503 |
| Instrumentation | 10% | $103,503 |
| Sitework | 4% | $41,401 |
| General conditions, bonds, mobilization, and demobilization | 5% | $51,751 |

**Construction Cost Opinion Without Contingency or Markup** **$1,397,284**

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Install Dechloramination Facilities

### Detailed Structural Worksheet

| ITEM | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|
| **Structural Detail** | | | | |
| Earthwork: Dewatering | days | **90** | $1,100 | $99,000 |
| Earthwork: Permanent Sheeting | sq ft | **5,500** | $25 | $137,500 |
| Earthwork: Tight Sheeting | sq ft | **0** | $25 | $0 |
| Earthwork: Temporary Sheeting | sq ft | **0** | $20 | $0 |
| Earthwork: Excavation | cu yds | **1,000** | $12 | $12,000 |
| Earthwork: Underdrain System | sq yds | **0** | $20 | $0 |
| Earthwork: Structural Fill | cu yds | **500** | $30 | $15,000 |
| Earthwork: Earth Fill | cu yds | **0** | $10 | $0 |
| Earthwork: Pile Foundation | sq ft | **800** | $90 | $72,000 |
| **Earthwork Total** | | | | **$335,500** |
| Concrete: Prep. & Rework | lump sum | **1** | $10,000 | $10,000 |
| Concrete: Footings | cu yds | **30** | $160 | $4,800 |
| Concrete: Base Slab | cu yds | **50** | $180 | $9,000 |
| Concrete: Walls | cu yds | **150** | $375 | $56,250 |
| Concrete: Floor Slabs | cu yds | **0** | $240 | $0 |
| Concrete: Structural Slabs | cu yds | **15** | $550 | $8,250 |
| Concrete: Walkways | cu yds | **10** | $550 | $5,500 |
| Concrete: Columns | cu yds | **0** | $550 | $0 |
| Concrete: Channels | cu yds | **20** | $180 | $3,600 |
| Concrete: Precast Troughs | cu yds | **0** | $180 | $0 |
| **Concrete Total** | | | | **$97,400** |
| Metals: Grating | sq ft | **200** | $25 | $5,000 |
| Metals: Aluminum Handrail | ft | **75** | $35 | $2,625 |
| Metals: Stairway | risers | **0** | $450 | $0 |
| Metals: Aluminum Geodesic Dome (round) | sq ft | **0** | $22 | $0 |
| Metals: Aluminum Geodesic Dome (rect.) | sq ft | **0** | $35 | $0 |
| Metals: Baffles and Weirs | ft | **0** | $20 | $0 |
| Metals: Hatches | each | **4** | $700 | $2,800 |
| **Metals Total** | | | | **$10,425** |
| Tank Cover | sq ft | **0** | $50 | $0 |
| Building: One-Story Building | sq ft | **120** | $100 | $12,000 |
| Building: Two-Story | sq ft | **0** | $140 | $0 |
| Building: Pre-engineered | sq ft | **0** | $50 | $0 |
| **Building Total** | | | | **$12,000** |
| Demolition: Selective | cu ft | **250** | $20 | $5,000 |
| Demolition: Structure | cu ft | **0** | $1 | $0 |
| Demolition: Mechanical | lump sum | **1** | $12,000 | $12,000 |
| **Demolition Total** | | | | **$17,000** |

EVANSVILLE WTP
COST ESTIMATING SPREADSHEET

## Add 3rd Set of South Primary and Secondary Sedimentation Basins

PROJECT NO. 9

### General Description

This project involves the addition of a third Primary Sedimentation Basin (flocculating clarifier) in the South plant, with all the associated internals, valves and connecting piping to the other South plant facilities. Sludge piping would be extended to a new sludge pumping structure located immediately south of the new primary sed. basin. The new sludge building would house all the necessary pumps, piping and valving for the third flocculating clarifier. This project also involves the addition of a third secondary sedimentation basin in the South plant, with all the associated internals, valves, and connecting piping to the other South plant facilities. Sludge piping would be extended to the existing South plant structure, which would be expanded with the necessary pumps, piping and valving for the third sedimentation basin.

### Summary of Construction Costs

| | | |
|---|---|---|
| Estimated Construction Cost Without Contingency or Markup (from page 2) | | $3,825,200 |
| Construction Subtotal Cost | | $3,825,200 |
| Contractor Overhead & Profit Mark-up | 15% | $573,800 |
| Estimated Construction Cost Without Contingency | | $4,400,000 |
| Contingency | 15% | $660,000 |
| **Estimated Construction Cost** | | **$5,060,000** |
| Estimated Total Non-Construction Costs (Engr., Proj. Mgmnt. & Legal) | | $1,000,000 |
| **Estimated Total Project Cost** | | **$6,060,000** |

The information presented herein represents the best judgment of professionals familiar with the construction industry. HNTB cannot guarantee that actual bids received will not vary from the estimate.

EVANSVILLE WTP
COST ESTIMATING SPREADSHEET

## Add 3rd Set of South Primary and Secondary Sedimentation Basins

## Cost Opinion Summary Sheet

| ITEM | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|
| **Structural** | | | | |
| Earthwork | See Detailed Structural Worksheet, p. 3 | | | $1,177,000 |
| Concrete | See Detailed Structural Worksheet, p. 3 | | | $754,250 |
| Metals | See Detailed Structural Worksheet, p. 3 | | | $110,675 |
| Buildings | See Detailed Structural Worksheet, p. 3 | | | $0 |
| Demolition | See Detailed Structural Worksheet, p. 3 | | | $27,000 |
| **Process & Mechanical Equipment and Major Piping Systems** | | | | |
| Conn. New & exsting lines (> 12-in. dia.) | each | 6 | $4,500 | $27,000 |
| Yard piping & valves | lump sum | 1 | $25,000 | $25,000 |
| Sludge piping & valves | lump sum | 1 | $45,000 | $45,000 |
| New sludge pump | each | 2 | $20,000 | $40,000 |
| Misc. Sed. Basin structures | each | 4 | $25,000 | $100,000 |
| Primary Sed. Basin (130 ft. w/ scrapers/motor/bridge/etc) | each | 1 | $300,000 | $300,000 |
| Sec. Sed. Basin (90 ft. w/ scrapers/motor/bridge/etc) | each | 1 | $220,000 | $220,000 |
| Al. Hatches, railings, ladders, misc. met., hardware | lump sum | 1 | $60,000 | $60,000 |
| Butterfly Valve - 36-inch with electric actuator | each | 1 | $30,000 | $30,000 |
| Butterfly Valve - 42-inch with electric actuator | each | 1 | $40,000 | $40,000 |
| Parshall Flume Flow Meters | each | 2 | $35,000 | $70,000 |
| Venturi Flow Meters - 42-inch | each | 2 | $50,000 | $100,000 |
| **Miscellaneous** | | | | |
| New south drive | sq yds | 700 | $50 | $35,000 |
| **Sub-Total Construction Cost** | | | | **$3,161,000** |

| Total Construction Cost Percentage-Based Estimates | Assumed % of Construction Cost | |
|---|---|---|
| Process, Mechanical, and Yard Piping Systems | 3% | $94,900 |
| HVAC & Plumbing | 1.0% | $31,700 |
| Electrical | 4% | $126,500 |
| Instrumentation | 3% | $94,900 |
| Sitework | 5% | $158,100 |
| General Conditions, Bonds, Mobilization, and Demobilization | 5% | $158,100 |

**Estimated Construction Cost Without Contingency or Markup** **$3,825,200**

EVANSVILLE WTP
COST ESTIMATING SPREADSHEET

## Add 3rd Set of South Primary and Secondary Sedimentation Basins

### Detailed Structural Worksheet

| ITEM | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|
| **Structural Detail** | | | | |
| Earthwork: Dewatering | days | 120 | $1,100 | $132,000 |
| Earthwork: Permanent Sheeting | sq ft | 0 | $25 | $0 |
| Earthwork: Tight Sheeting | sq ft | 0 | $25 | $0 |
| Earthwork: Temporary Sheeting | sq ft | 1,500 | $20 | $30,000 |
| Earthwork: Excavation | cu yds | 16,000 | $7 | $112,000 |
| Earthwork: Underdrain System | sq yds | 0 | $20 | $0 |
| Earthwork: Structural Fill | cu yds | 2,200 | $30 | $66,000 |
| Earthwork: Earth Fill | cu yds | | $10 | $0 |
| Earthwork: Pile Foundation | LF | 9,300 | $90 | $837,000 |
| **Earthwork Total** | | | | **$1,177,000** |
| Concrete: Prep & Rework | lump sum | 1 | $12,000 | $12,000 |
| Concrete: Footings | cu yds | 0 | $180 | $0 |
| Concrete: Base Slab | cu yds | 1,900 | $200 | $380,000 |
| Concrete: Walls | cu yds | 700 | $450 | $315,000 |
| Concrete: Floor Slabs | cu yds | 0 | $250 | $0 |
| Concrete: Structural Slabs | cu yds | 10 | $575 | $5,750 |
| Concrete: Walkways | cu yds | 30 | $350 | $10,500 |
| Concrete: Columns | cu yds | 10 | $600 | $6,000 |
| Concrete: Channels | cu yds | 100 | $250 | $25,000 |
| Concrete: Precast Troughs | cu yds | 0 | $200 | $0 |
| **Concrete Total** | | | | **$754,250** |
| Metals: Grating | sq ft | 425 | $35 | $14,875 |
| Metals: Aluminum Handrail | LF | 850 | $50 | $42,500 |
| Metals: Stairway | risers | 12 | $500 | $6,000 |
| Metals: Chain Link Fence (8' H, PVC) | LF | 700 | $35 | $24,500 |
| Metals: Swing Gate | each | 1 | $2,800 | $2,800 |
| Metals: Baffles and Weirs | LF | 0 | $25 | $0 |
| Metals: Hatches | each | 0 | $2,000 | $0 |
| Metals: Misc. | lump sum | 1 | $20,000 | $20,000 |
| **Metals Total** | | | | **$110,675** |
| Tank Cover | sq ft | 0 | $50 | $0 |
| Building: One-Story Building (new Sludge Bldg.) | sq ft | 0 | $500 | $0 |
| Building: Two-Story | sq ft | 0 | $140 | $0 |
| Building: Pre-engineered | sq ft | 0 | $50 | $0 |
| **Building Total** | | | | **$0** |
| Demolition: Selective | cu ft | 400 | $25 | $10,000 |
| Demolition: Structure | cu ft | 200 | $20 | $4,000 |
| Demolition: Mechanical | lump sum | 1 | $13,000 | $13,000 |
| **Demolition Total** | | | | **$27,000** |

EVANSVILLE WTP
COST ESTIMATING SPREADSHEET

## Add Filters 35 & 36

PROJECT NO. 10

### General Description

This project involves the addition of Filters 35 and 36 to increase filtration capacity to return the plant to 60-MGD filtration capacity.

**Master Plan Project No. 11**

### Summary of Construction Costs

| | | |
|---|---|---|
| Estimated Construction Cost Without Contingency or Markup (from page 2) | | $2,261,900 |
| Construction Subtotal Cost | | $2,261,900 |
| Contractor Overhead & Profit Mark-up | 15% | $339,300 |
| Estimated Construction Cost Without Contingency | | $2,600,000 |
| Contingency | 15% | $390,000 |
| **Estimated Construction Cost** | | **$2,990,000** |
| Estimated Total Non-Construction Costs (Engr., Proj. Mgmnt. & Legal) | | $600,000 |
| **Estimated Total Project Cost** | | **$3,590,000** |

The information presented herein represents the best judgment of professionals familiar with the construction industry. HNTB cannot guarantee that actual bids received will not vary from the estimate.

EVANSVILLE WTP
COST ESTIMATING SPREADSHEET

## Add Filters 35 & 36

## Cost Opinion Summary Sheet

| ITEM | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|
| **Structural** | | | | |
| Earthwork | See Detailed Structural Worksheet, p. 3 | | | $394,380 |
| Concrete | See Detailed Structural Worksheet, p. 3 | | | $260,300 |
| Metals | See Detailed Structural Worksheet, p. 3 | | | $38,000 |
| Buildings | See Detailed Structural Worksheet, p. 3 | | | $165,000 |
| Demolition | See Detailed Structural Worksheet, p. 3 | | | $33,500 |
| **Process & Mechanical Equipment and Major Piping Systems** | | | | |
| Filter piping & valves | lump sum | 1 | $285,000 | $285,000 |
| Filter underdrains & internals | each | 2 | $190,000 | $380,000 |
| Filter media & support gravel | sq. ft. | 2,400 | $35 | $84,000 |
| Small piping & valves | lump sum | 1 | $30,000 | $30,000 |
| Filter controls | each | 2 | $30,000 | $60,000 |
| **Sub-Total Construction Cost** | | | | **$1,730,200** |

| Total Construction Cost Percentage-Based Estimates | Assumed % of Construction Cost | |
|---|---|---|
| Process, Mechanical, and Yard Piping Systems | 4% | $69,300 |
| HVAC & Plumbing | 5% | $86,600 |
| Electrical | 7% | $121,200 |
| Instrumentation | 7% | $121,200 |
| Sitework | 3% | $46,800 |
| General Conditions, Bonds, Mobilization, and Demobilization | 5% | $86,600 |

**Estimated Construction Cost Without Contingency or Markup** **$2,261,900**

**EVANSVILLE WTP**
**COST ESTIMATING SPREADSHEET**

## Add Filters 35 & 36

### Detailed Structural Worksheet

| ITEM | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|
| **Structural Detail** | | | | |
| Earthwork: Dewatering | days | **90** | $1,100 | $99,000 |
| Earthwork: Permanent Sheeting | sq ft | **0** | $25 | $0 |
| Earthwork: Tight Sheeting | sq ft | **4,500** | $25 | $112,500 |
| Earthwork: Temporary Sheeting | sq ft | **0** | $20 | $0 |
| Earthwork: Excavation | cu yds | **3,340** | $12 | $40,080 |
| Earthwork: Underdrain System | sq yds | **0** | $20 | $0 |
| Earthwork: Structural Fill | cu yds | **740** | $30 | $22,200 |
| Earthwork: Earth Fill | cu yds | **360** | $10 | $3,600 |
| Earthwork: Pile Foundation | LF | **1,300** | $90 | $117,000 |
| **Earthwork Total** | | | | **$394,380** |
| Concrete: Prep & Rework | lump sum | **1** | $30,000 | $30,000 |
| Concrete: Footings | cu yds | **0** | $180 | $0 |
| Concrete: Base Slab | cu yds | **510** | $200 | $102,000 |
| Concrete: Walls | cu yds | **210** | $450 | $94,500 |
| Concrete: Floor Slabs | cu yds | **0** | $250 | $0 |
| Concrete: Structural Slabs | cu yds | **20** | $575 | $11,500 |
| Concrete: Walkways | cu yds | **50** | $350 | $17,500 |
| Concrete: Columns | cu yds | **0** | $600 | $0 |
| Concrete: Channels | cu yds | **0** | $250 | $0 |
| Concrete: Precast Troughs | each | **24** | $200 | $4,800 |
| **Concrete Total** | | | | **$260,300** |
| Metals: Grating | sq ft | **0** | $35 | $0 |
| Metals: Aluminum Handrail | ft | **200** | $50 | $10,000 |
| Metals: Stairway | risers | **0** | $500 | $0 |
| Metals: Chain Link Fence (8' H, PVC) | LF | **0** | $35 | $0 |
| Metals: Swing Gate | each | **0** | $2,800 | $0 |
| Metals: Baffles and Weirs | ft | **0** | $25 | $0 |
| Metals: Hatches | each | **4** | $2,000 | $8,000 |
| Metals: Misc | lump sum | **1** | $20,000 | $20,000 |
| **Metals Total** | | | | **$38,000** |
| Tank Cover | sq ft | **0** | $50 | $0 |
| Building: One-Story Building (superstructure only) | sq ft | **2,750** | $60 | $165,000 |
| Building: Two-Story | sq ft | **0** | $140 | $0 |
| Building: Pre-engineered | sq ft | **0** | $50 | $0 |
| **Building Total** | | | | **$165,000** |
| Demolition: Selective | cu ft | **300** | $25 | $7,500 |
| Demolition: Structure | sq ft | **600** | $10 | $6,000 |
| Demolition: Mechanical | lump sum | **1** | $20,000 | $20,000 |
| **Demolition Total** | | | | **$33,500** |

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Traveling Intake Screen Renovation

PROJECT NO. 12

### General Description

This project involves the renovation of one of the three traveling screens at the river intake structure on a regular interval based on the condition of the screens. One screen would be renovated every two years to repair and replace damaged and worn screen material and mechanisms. One of the three screens has already been renovated in the recent past.

### Summary of Project Costs

| | | |
|---|---|---|
| Construction Cost Opinion Without Contingency or Markup (from page 2) | | $73,000 |
| Contractor Overhead & Profit Mark-up | 10% | $7,000 |
| Construction Cost Opinion Without Contingency | | $80,000 |
| Contingency | 15% | $12,000 |
| Construction Cost Opinion | | $92,000 |
| Engineering, Project Management, and Legal | | $20,000 |
| **Total Project Cost** | | **$112,000** |

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Traveling Intake Screen Renovation

PROJECT COST OPINION WORKSHEET

| ITEM | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|
| **Structural** | | | | |
| Earthwork | See Detailed Structural Worksheet, p. 3 | | | $0 |
| Concrete | See Detailed Structural Worksheet, p. 3 | | | $4,000 |
| Metals | See Detailed Structural Worksheet, p. 3 | | | $0 |
| Buildings | See Detailed Structural Worksheet, p. 3 | | | $0 |
| Demolition | See Detailed Structural Worksheet, p. 3 | | | $4,000 |
| **Process Mechanical & Control Equipment and Major Piping Systems** | | | | |
| Renovate screen material & mechanisms | Each | 1 | **$40,000** | $40,000 |
| Misc. mechanical work | Each | 1 | **$10,000** | $10,000 |
| **Sub-Total Construction Cost** | | | | **$58,000** |

| Total Construction Cost Percentage-Based Estimates | Assumed % of Construction Cost | |
|---|---|---|
| Process-Mechanical and Yard Piping Systems | 0% | $0 |
| HVAC & Plumbing | 0% | $0 |
| Electrical (total 2 intakes) | 10% | $5,800 |
| Instrumentation | 10% | $5,800 |
| Sitework | 0% | $0 |
| General conditions, bonds, mobilization, and demobilization | 5% | $2,900 |

**Construction Cost Opinion Without Contingency or Markup** **$72,500**

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Traveling Intake Screen Renovation

### Detailed Structural Worksheet

| ITEM | Units | Quantity | Unit Cost ($) | Initial Cost ($) |
|---|---|---|---|---|
| **Structural Detail** | | | | |
| Earthwork: Dewatering | days | 0 | $1,000 | $0 |
| Earthwork: Permanent Sheeting | sq ft | 0 | $25 | $0 |
| Earthwork: Tight Sheeting | sq ft | 0 | $25 | $0 |
| Earthwork: Temporary Sheeting | sq ft | 0 | $15 | $0 |
| Earthwork: Excavation | cu yds | 0 | $12 | $0 |
| Earthwork: Underdrain System | sq yds | 0 | $21 | $0 |
| Earthwork: Structural Fill | cu yds | 0 | $15 | $0 |
| Earthwork: Earth Fill | cu yds | 0 | $10 | $0 |
| Earthwork: Pile Foundation | sq ft | 0 | $15 | $0 |
| **Earthwork Total** | | | | **$0** |
| Concrete: Prep & Rework | lump sum | 1 | $4,000 | $4,000 |
| Concrete: Footings | cu yds | 0 | $160 | $0 |
| Concrete: Base Slab | cu yds | 0 | $180 | $0 |
| Concrete: Walls | cu yds | 0 | $375 | $0 |
| Concrete: Floor Slabs | cu yds | 0 | $240 | $0 |
| Concrete: Structural Slabs | cu yds | 0 | $550 | $0 |
| Concrete: Walkways | cu yds | 0 | $550 | $0 |
| Concrete: Columns | cu yds | 0 | $550 | $0 |
| Concrete: Channels | cu yds | 0 | $180 | $0 |
| Concrete: Precast Troughs | cu yds | 0 | $180 | $0 |
| **Concrete Total** | | | | **$4,000** |
| Metals: Grating | sq ft | 0 | $25 | $0 |
| Metals: Aluminum Handrail | ft | 0 | $35 | $0 |
| Metals: Stairway | risers | 0 | $450 | $0 |
| Metals: Aluminum Geodesic Dome (round) | sq ft | 0 | $22 | $0 |
| Metals: Aluminum Geodesic Dome (rect.) | sq ft | 0 | $35 | $0 |
| Metals: Baffles and Weirs | ft | 0 | $20 | $0 |
| Metals: Hatches | each | 0 | $700 | $0 |
| **Metals Total** | | | | **$0** |
| Tank Cover | sq ft | 0 | $50 | $0 |
| Building: One-Story Building | sq ft | 0 | $100 | $0 |
| Building: Two-Story | sq ft | 0 | $140 | $0 |
| Building: Pre-engineered | sq ft | 0 | $50 | $0 |
| **Building Total** | | | | **$0** |
| Demolition: Selective | cu ft | 0 | $20 | $0 |
| Demolition: Structure | cu ft | 0 | $1 | $0 |
| Demolition: Mechanical | lump sum | 1 | $4,000 | $4,000 |
| **Demolition Total** | | | | **$4,000** |

EVANSVILLE WATER AND WASTEWATER MASTER PLAN
WATER TREATMENT PLANT
COST ESTIMATING SPREADSHEET

## Complete Phase III of Lead Abatement Program

PROJECT NO. 17

### General Description

This project involves the completion (Phase III) of the lead paint abatement program in the Filter Building.

### Summary of Project Costs

| | |
|---|---|
| Construction Cost Opinion With Contractor Contingency and Markup | $174,000 |
| Contractor Overhead & Profit Mark-up | $26,000 |
| Construction Cost Opinion Without Contingency | $200,000 |
| Contingency | $29,000 |
| Construction Cost Opinion | $229,000 |
| Engineering, Project Management, and Legal | $52,000 |
| **Total Project Cost** | **$281,000** |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** **PROJECT NO. 2**
**Replace #2 booster pump at Killian Station with VFD**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | Pump w/VFD | 1 | LS | $50,000 | $50,000 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$50,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $5,000 |
| | | | | | |
| | **Raw Project Cost** | | | | $55,000 |
| | | | | | |
| | 15% Contingency | | | | $8,000 |
| | **Project Cost w/Contingency** | | | | $63,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | $13,000 |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$76,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** PROJECT NO. 3
**Vanness Phase III/Hogue/Rosenburg**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 12" Water Main | 300 | LF | $60 | $18,000 |
| | | | | | $0 |
| 2 | Pavement Repair | 700 | SY | $55 | $38,500 |
| | | | | | $0 |
| 3 | Granular Back Fill | 350 | CY | $35 | $12,250 |
| | | | | | $0 |
| 4 | Service Connections | 12 | EA | $900 | $10,800 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$80,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $8,000 |
| | Traffic Maintenance (2%) | | | | $2,000 |
| | **Raw Project Cost** | | | | $90,000 |
| | | | | | |
| | 15% Contingency | | | | $14,000 |
| | **Project Cost w/Contingency** | | | | $104,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$104,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** PROJECT NO. 4
**Oak Hill Road**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 8" Water Main | 8,000 | LF | $40 | $320,000 |
| | | | | | $0 |
| 2 | Pavement Repair | 1,500 | SY | $55 | $82,500 |
| | | | | | $0 |
| 3 | Granular Back Fill | 2,050 | CY | $35 | $71,750 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$474,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $47,000 |
| | Traffic Maintenance (2%) | | | | $9,000 |
| | **Raw Project Cost** | | | | $530,000 |
| | | | | | |
| | 15% Contingency | | | | $80,000 |
| | **Project Cost w/Contingency** | | | | $610,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$610,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** PROJECT NO. 6
**Stringtown Louisiana to Morgan**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| 1 | 16" Water Main | 1,300 | LF | $75 | $97,500 |
| | | | | | $0 |
| 2 | Pavement Repair | 500 | SY | $55 | $27,500 |
| | | | | | $0 |
| 3 | Granular Back Fill | 950 | CY | $35 | $33,250 |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$158,000** |
| | Mobilization, Job Administration, etc (10%) | | | | $16,000 |
| | **Raw Project Cost** | | | | $174,000 |
| | 15% Contingency | | | | $26,000 |
| | **Project Cost w/Contingency** | | | | $200,000 |
| | Engineering, PM, Legal, Easements | | | | $40,000 |
| | **Total Estimated Project Cost** | | | | **$240,000** |

**Environmental Management Corporation**
**Capital Improvement Program**
Evansville Water and Sewer Utility

**Master Plan Cost Estimate**
**For the Construction of: PROJECT NO. 10**
**New Elevated Storage Tank in Killian Pressure Zone**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| 1 | Elevated Storage Tank 1 MG | 1 | LS | $1,600,000 | $1,600,000 |
| 2 | Miscellaneous Piping | 1 | LS | $80,000 | $80,000 |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$1,680,000** |
| | Mobilization, Job Administration, etc (10%) | | | | $168,000 |
| | **Raw Project Cost** | | | | $1,848,000 |
| | 15% Contingency | | | | $277,000 |
| | **Project Cost w/Contingency** | | | | $2,130,000 |
| | Engineering, PM, Legal | | | | $380,000 |
| | Property Acquisition | | | | $50,000 |
| | **Total Estimated Project Cost** | | | | **$2,560,000** |



Cause No. 43190
Exhibit CG-2
2/19/2007

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** **PROJECT NO. 11**
**Old State Road West of Highway 41 - Tie-in to 30" Main**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 8" Water Main | 400 | LF | $40 | $16,000 |
| | | | | | $0 |
| 2 | Pavement Repair | 250 | SY | $55 | $13,750 |
| | | | | | $0 |
| 3 | Granular Back Fill | 500 | CY | $35 | $17,500 |
| | | | | | $0 |
| 4 | Connection to 30" | 1 | LS | $2,000 | $2,000 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$49,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $5,000 |
| | Traffic Maintenance (2%) | | | | $1,000 |
| | **Raw Project Cost** | | | | $55,000 |
| | | | | | |
| | 15% Contingency | | | | $8,000 |
| | **Project Cost w/Contingency** | | | | $63,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$63,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** **PROJECT NO. 12**
**Schaller Lane**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 8" Water Main | 1,200 | LF | $40 | $48,000 |
| | | | | | $0 |
| 2 | Granular Back Fill | 50 | CY | $35 | $1,750 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$50,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $5,000 |
| | Traffic Maintenance (2%) | | | | $0 |
| | **Raw Project Cost** | | | | $55,000 |
| | | | | | |
| | 15% Contingency | | | | $8,000 |
| | **Project Cost w/Contingency** | | | | $63,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$63,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of: PROJECT NO. 13**
**Altitude valve and piping modifications at Lincoln Tank**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | Piping Modifications | 1 | LS | $45,000 | $45,000 |
| | | | | | $0 |
| 2 | Altitude Valve | 1 | LS | $5,000 | $5,000 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$50,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $5,000 |
| | | | | | |
| | **Raw Project Cost** | | | | $55,000 |
| | | | | | |
| | 15% Contingency | | | | $8,000 |
| | **Project Cost w/Contingency** | | | | $63,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | $13,000 |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$76,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** **PROJECT NO. 14**
**7th Avenue from Shanklin St to Florida St**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| 1 | 8" Water Main | 1,240 | LF | $40 | $49,600 |
| | | | | | $0 |
| 2 | Pavement Repair | 400 | SY | $55 | $22,000 |
| | | | | | $0 |
| 3 | Granular Back Fill | 430 | CY | $35 | $15,050 |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$87,000** |
| | Mobilization, Job Administration, etc (10%) | | | | $9,000 |
| | Traffic Maintenance (2%) | | | | $2,000 |
| | **Raw Project Cost** | | | | $98,000 |
| | 15% Contingency | | | | $15,000 |
| | **Project Cost w/Contingency** | | | | $113,000 |
| | Engineering, PM, Legal, Easements | | | | |
| | **Total Estimated Project Cost** | | | | **$113,000** |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** **PROJECT NO. 15**
**Shanklin St from 7th Avenue to Fulton Ave**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 8" Water Main | 1,180 | LF | $40 | $47,200 |
| | | | | | $0 |
| 2 | Pavement Repair | 300 | SY | $55 | $16,500 |
| | | | | | $0 |
| 3 | Granular Back Fill | 300 | CY | $35 | $10,500 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$74,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $7,000 |
| | Traffic Maintenance (2%) | | | | $1,000 |
| | **Raw Project Cost** | | | | $82,000 |
| | | | | | |
| | 15% Contingency | | | | $12,000 |
| | **Project Cost w/Contingency** | | | | $94,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$94,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** **PROJECT NO. 16**
**Morgan Avenue from Highway 41 to Fares St**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 12" Water Main | 2,300 | LF | $50 | $115,000 |
| | | | | | $0 |
| 2 | Pavement Repair | 450 | SY | $55 | $24,750 |
| | | | | | $0 |
| 3 | Granular Back Fill | 1,100 | CY | $35 | $38,500 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$178,300** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $18,000 |
| | | | | | |
| | **Raw Project Cost** | | | | $196,000 |
| | | | | | |
| | 15% Contingency | | | | $29,000 |
| | **Project Cost w/Contingency** | | | | $225,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | $45,000 |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$270,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of: PROJECT NO. 17**
**Add VFD for #1 booster pump at Campground Booster**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | VFD for Existing Pump | 1 | LS | $20,000 | $20,000 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$20,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $2,000 |
| | | | | | |
| | **Raw Project Cost** | | | | $22,000 |
| | | | | | |
| | 15% Contingency | | | | $3,000 |
| | **Project Cost w/Contingency** | | | | $25,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | $8,000 |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$33,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** PROJECT NO. 18
**Mohr Road - from west end of existing main to St. Joe Avenue**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| 1 | 12" Water Main | 1,700 | LF | $60 | $102,000 |
| | | | | | $0 |
| 2 | Pavement Repair | 1,200 | SY | $55 | $66,000 |
| | | | | | $0 |
| 3 | Granular Backfill | 1,700 | CY | $35 | $59,500 |
| | | | | | $0 |
| 4 | Railroad Crossing | 1 | LS | $20,000 | $20,000 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$228,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $23,000 |
| | Traffic Maintenance (2%) | | | | $5,000 |
| | **Raw Project Cost** | | | | $260,000 |
| | | | | | |
| | 15% Contingency | | | | $39,000 |
| | **Project Cost w/Contingency** | | | | $299,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | $60,000 |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$359,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** PROJECT NO. 19
**St. George Road from Ward Road to Oak Hill Road**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 8" Water Main | 2,670 | LF | $40 | $106,800 |
| | | | | | $0 |
| 2 | Pavement Repair | 600 | SY | $55 | $33,000 |
| | | | | | $0 |
| 3 | Granular Back Fill | 730 | CY | $35 | $25,550 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$165,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $17,000 |
| | Traffic Maintenance (2%) | | | | $3,000 |
| | **Raw Project Cost** | | | | $185,000 |
| | | | | | |
| | 15% Contingency | | | | $28,000 |
| | **Project Cost w/Contingency** | | | | $213,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$213,000** |
| | | | | | |



Cause No. 43190
Exhibit CG-2
2/19/2007

**Environmental Management Corporation**
**Capital Improvement Program**
Evansville Water and Sewer Utility

**Master Plan Cost Estimate**
**For the Construction of:** PROJECT NO. 22
**Replace Main on Helfrich from Broadway to Saunders**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| 1 | 8" Water Main | 1,100 | LF | $40 | $44,000 |
| | | | | | $0 |
| 2 | Pavement Repair | 250 | SY | $55 | $13,750 |
| | | | | | $0 |
| 3 | Granular Back Fill | 600 | CY | $35 | $21,000 |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$58,000** |
| | Mobilization, Job Administration, etc (10%) | | | | $6,000 |
| | Traffic Maintenance (2%) | | | | $1,000 |
| | **Raw Project Cost** | | | | $65,000 |
| | 15% Contingency | | | | $10,000 |
| | **Project Cost w/Contingency** | | | | $75,000 |
| | Engineering, PM, Legal, Easements | | | | |
| | **Total Estimated Project Cost** | | | | **$75,000** |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of: PROJECT NO. 23**
**500 block of Boehne Avenue, Replace old 2" main and service changeovers**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| 1 | 6" Water Main | 600 | LF | $30 | $18,000 |
| | | | | | $0 |
| 3 | Pavement Repair | 200 | SY | $55 | $11,000 |
| | | | | | $0 |
| 4 | Granular Back Fill | 300 | CY | $35 | $10,500 |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$40,000** |
| | Mobilization, Job Administration, etc (10%) | | | | $4,000 |
| | **Raw Project Cost** | | | | $44,000 |
| | 15% Contingency | | | | $7,000 |
| | **Project Cost w/Contingency** | | | | $51,000 |
| | Engineering, PM, Legal, Easements | | | | |
| | **Total Estimated Project Cost** | | | | **$51,000** |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** **PROJECT NO. 24**
**Ruston Lane and Highway 57, Tie-in main on Ruston to main on Hwy 57**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 12" Water Main | 150 | LF | $40 | $6,000 |
| | | | | | $0 |
| 2 | Granular Back Fill | 40 | CY | $35 | $1,400 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$7,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $1,000 |
| | Traffic Maintenance (2%) | | | | $0 |
| | **Raw Project Cost** | | | | $8,000 |
| | | | | | |
| | 15% Contingency | | | | $2,000 |
| | **Project Cost w/Contingency** | | | | $10,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$10,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** PROJECT NO. 25
**Replace Main on Frey Road, North of Broadway**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 8" Water Main | 2,080 | LF | $40 | $83,200 |
| | | | | | $0 |
| 2 | Pavement Repair | 250 | SY | $55 | $13,750 |
| | | | | | $0 |
| 3 | Granular Back Fill | 550 | CY | $35 | $19,250 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$116,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $12,000 |
| | Traffic Maintenance (2%) | | | | $2,000 |
| | **Raw Project Cost** | | | | $130,000 |
| | | | | | |
| | 15% Contingency | | | | $20,000 |
| | **Project Cost w/Contingency** | | | | $150,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$150,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of: PROJECT NO. 26**
**Covert Avenue (shoshone, Pollack, & Fuquay)**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 12" Water Main | 8,100 | LF | $33 | $267,300 |
| | | | | | $0 |
| 2 | Granular Back Fill | 170 | CY | $35 | $5,950 |
| | | | | | $0 |
| | | | | | $0 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$273,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $27,000 |
| | Traffic Maintenance (2%) | | | | $5,000 |
| | **Raw Project Cost** | | | | $305,000 |
| | | | | | |
| | 15% Contingency | | | | $46,000 |
| | **Project Cost w/Contingency** | | | | $351,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | $70,000 |
| | | | | | |
| | **Total Estimated Project Cost** | | | | **$421,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
**Evansville Water and Sewer Utility**

**Master Plan Cost Estimate**
**For the Construction of:** PROJECT NO. 27
**Extend main to serve the 1800 and 1900 blk's of S Werner**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 1 | 8" Water Main | 550 | LF | $40 | $22,000 |
| | | | | | $0 |
| 2 | Pavement Repair | 200 | SY | $55 | $11,000 |
| | | | | | $0 |
| 3 | Granular Back Fill | 180 | CY | $35 | $6,300 |
| | | | | | |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$39,000** |
| | | | | | |
| | Mobilization, Job Administration, etc (10%) | | | | $4,000 |
| | Traffic Maintenance (2%) | | | | $1,000 |
| | **Raw Project Cost** | | | | $44,000 |
| | | | | | |
| | *15% Contingency* | | | | $7,000 |
| | **Project Cost w/Contingency** | | | | $51,000 |
| | | | | | |
| | Engineering, PM, Legal, Easements | | | | |
| | | | | | |
| | ***Total Estimated Project Cost*** | | | | **$51,000** |
| | | | | | |

**Environmental Management Corporation**
**Capital Improvement Program**
Evansville Water and Sewer Utility

**Master Plan Cost Estimate**
**For the Construction of:** PROJECT NO. 28
**Extend main to serve Saunders Ave East of Werner and the 1800 blk of S Craig**

| Item No. | Item Description | Quantity | Units | Unit Cost | Cost Extension |
|---|---|---|---|---|---|
| 1 | 8" Water Main | 270 | LF | $40 | $10,800 |
| | | | | | $0 |
| 2 | Pavement Repair | 100 | SY | $55 | $5,500 |
| | | | | | $0 |
| 3 | Granular Back Fill | 180 | CY | $35 | $6,300 |
| | **Subtotal (rounded to nearest $1,000)** | | | | **$23,000** |
| | Mobilization, Job Administration, etc (10%) | | | | $2,000 |
| | Traffic Maintenance (2%) | | | | $0 |
| | **Raw Project Cost** | | | | $25,000 |
| | 15% Contingency | | | | $4,000 |
| | **Project Cost w/Contingency** | | | | $29,000 |
| | Engineering, PM, Legal, Easements | | | | |
| | **Total Estimated Project Cost** | | | | **$29,000** |

City of Evansville, Indiana
Cause No. 43190
Petitioners' Exhibit No. CG-3

# 2007-2009 RANKED CAPITAL PROJECTS

# 2007-2009 Ranked Capital Improvements Projects
## Water Treatment Plant and Distribution System
## Evansville, IN

| Project Prioity Ranking | Project Description | Project Costs | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | Construction | Contingency | Planning / Study | Design | Construction Administration | TOTAL | |
| **Water Treatment Plant Improvements** | | | | | | | | |
| 1 | Replace three existing V-800 chlorinators with four (4) new V-2000 chlorinators | $80,000 | $12,000 | | | | $92,000 | Finish refurbishement of chlorine feed system |
| 2 | Add SCADA to ammonia, sodium chlorite, chlorine dioxide, and chlorine feed | $140,000 | $21,000 | | $25,000 | $12,000 | $198,000 | Finish chemical feed SCADA installation |
| 3 | Install dechloramination facilities for backwash and filter-to-waste wastewaters to Ohio River (preliminary design) | | | | $110,000 | | $110,000 | No Action - Action to occur when required by NPDES |
| 4 | Install residuals collection and pumping facility for filter backwash waste & sedimentation processes to WWTP (preliminary design) | | | | $110,000 | | $110,000 | No Action - Action to occur when required by NPDES |
| 5 | Recondition North Plant flocculation tanks (baffles, mixers & sluice gates) and primary sedimentation basin sludge scrapers | $1,100,000 | $170,000 | | $120,000 | $130,000 | $1,520,000 | Update North Plant flocculation and primary sedimentation |
| 6 | Replace 4160-volt motor starters on LS Pumps #1-#6. Replace magnetic drive on LS Pump #1 with a VFD and add a control unit. | $650,000 | $98,000 | | $75,000 | $75,000 | $898,000 | Update low service pumping electrical |
| 7 | Replace 4160-volt motor starters on HS Pumps #8-#10. Replace magnetic drive on HS Pump #9 with a VFD and add a control unit. | $440,000 | $66,000 | | $50,000 | $50,000 | $606,000 | Update high service pumping electrical |
| 8 | Perform flow pattern analysis for the entire plant for North/South clearwell interconnect | | | $50,000 | | | $50,000 | Determine where water is going between N. & S. Plants |
| 9 | Add 3rd set of South Plant Primary and Secondary Basins | $4,400,000 | $660,000 | | $500,000 | $500,000 | $6,060,000 | Increase flow capacity of South Plant & assist with flow balancing between N. & S. Plants |
| 10 | Add Filters 35 and 36 (6 MGD conventional media filters) | $2,600,000 | $390,000 | | $300,000 | $300,000 | $3,590,000 | Increase firm filtration capacity to 60 MGD |
| 11 | Add two backwash water flow meters | $50,000 | $8,000 | | $10,000 | | $68,000 | Increase reliability of filter backwash flow metering |
| 12 | Renovate Traveling Screen #2 | $80,000 | $12,000 | | $15,000 | $5,000 | $112,000 | Update raw water screening |
| 13 | Individual filter effluent flow meters filters 13-20 | $60,000 | $9,000 | | $15,000 | | $84,000 | Increase reliability of filter effluent flow metering |
| 14 | Conduct inventory and replace 220-volt and 480-volt (as needed) circuit breakers throughout the plant. | $180,000 | $27,000 | $20,000 | $25,000 | | $252,000 | Increase reliability of electrical service |
| 15 | In-depth plant life span/alternate plant feasibility study (collector wells, new surface water plant, etc.) | | | $300,000 | | | $300,000 | Determine options for replacing or refurbishing existing plant |
| 16 | Re-route South Plant filtered water main to 1.5 MG clearwell | $200,000 | $30,000 | | | $50,000 | $280,000 | Ensure flow path of S. Plant finished water |
| 17 | Complete Phase III of lead paint abatement program in Filter Building | $200,000 | $29,000 | $7,000 | $25,000 | $20,000 | $281,000 | Re-coat lead based painted walls |
| 18 | Paint low service building on the interior and exterior | $80,000 | $12,000 | | $12,000 | $10,000 | $114,000 | Update coating of low service building |
| 19 | Evaluate chlorite/chlorate formation in sed. basins due to chlorine dioxide ($ClO_2$) feed in the raw water (during summer) | | | $75,000 | | | $75,000 | Determine whether or not chlorite formation is an issue with raw water $ClO_2$ feed |
| 20 | Evaluate alternative inactivation technologies (UV, Ozone, & membranes) for Crypto inactivation/removal if needed to meet LT2 requirements | | | $200,000 | | | $200,000 | Needed if Crypto conc. is greater than 0.075 oocysts/L (Bin 1 limit) |
| | | | | | | **Water Treatment Plant Total** | **$15,000,000** | |

Prepared by
HNTB Corporation
February 19, 2007



Cause No. 43190
Exhibit CG-3

## 2007-2009 Ranked Capital Improvements Projects
## Water Treatment Plant and Distribution System
## Evansville, IN

| Project Priority Ranking | Project Description | Project Costs | | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | Construction | Contingency | Planning | Design | Construction Administration | Property / Equipment Acquisition | TOTAL | |
| **Distribution System Improvements** | | | | | | | | | |
| 1 | Veterans Memorial water main replacement (1,100' of 48") | $1,670,000.0 | $228,000 | | | $150,000 | $50,000 | $2,098,000 | No Action |
| 2 | Replace #2 booster pump at Killian Station w/VFD | $55,000.0 | $8,000 | | $13,000 | | | $76,000 | New Project |
| 3 | Vanness Phase III/Hogue/Rosenburg 300' of 12" change services | $90,000.0 | $14,000 | | | | | $104,000 | No Action |
| 4 | Oak Hill Road 8,000' of 8" | $530,000.0 | $80,000 | | | | | $610,000 | No Action |
| 5 | Emergency Generator for Operations Building - Phones, Computer Servers and MP-2, Lights, Heating and A/C | $65,000.0 | $10,000 | | | | | $75,000 | New Project |
| 6 | Stringtown Louisiana to Morgan (1300' of 16") | $174,000.0 | $26,000 | | $30,000 | $10,000 | | $240,000 | New Project |
| 7 | Water main improvements associated w/ INDOT road proj. | $2,180,000.0 | $327,000 | | $250,000 | $150,000 | $100,000 | $3,007,000 | Utilty current avgs. approx 1M/yr |
| 8 | Meter Reading Equipment | | | | | | $100,000 | $100,000 | New initiatives |
| 9 | Industrial Meter Replacement | | | | | | $200,000 | $200,000 | New initiatives |
| 10 | New elevated storage tank in Killian Pressure Zone | $1,850,000.0 | $280,000 | $20,000 | $80,000 | $280,000 | $50,000 | $2,560,000 | Additional storage |
| 11 | Old State Rd. West of Hwy 41 (Tie-in to 30" main) (400' of 8") | $55,000.0 | $8,000 | | | | | $63,000 | New Project |
| 12 | Schaller Ln. (1,200' of 8") | $55,000.0 | $8,000 | | | | | $63,000 | New Project |
| 13 | Altitude valve and piping modifications at Lincoln Tank. | $55,000.0 | $8,000 | | $13,000 | | | $76,000 | New Project |
| 14 | 7th Avenue from Shanklin St to Florida St 1,240' of 8" | $98,000.0 | $15,000 | | | | | $113,000 | No Action |
| 15 | Shanklin St from 7th Ave. to Fulton Ave 1,180' of 8" | $82,000.0 | $12,000 | | | | | $94,000 | No Action |
| 16 | Morgan Avenue (Hwy 41 to Fares) 2,300' of 12" | $196,000.0 | $29,000 | | $35,000 | $10,000 | | $270,000 | No Action |
| 17 | Add VFD for #1 booster pump at Campground Booster | $22,000.0 | $3,000 | | $8,000 | | | $33,000 | New Project |
| 18 | 12" main on Mohr Rd - from existing water main to St Joe Ave (1,700') | $260,000.0 | $39,000 | | $40,000 | $20,000 | | $359,000 | No Action |
| 19 | St. George Rd. from Ward Rd to Oak Hill Rd 2,670' of 8" | $185,000.0 | $28,000 | | | | | $213,000 | No Action |
| 20 | Hydrant Replacement Program | $48,000.0 | $7,000 | | | | | $55,000 | No Action |
| 21 | Valve Replacement/Installation Program | $90,000.0 | $14,000 | | | | | $104,000 | No Action |
| 22 | Replace Main on Helfrich From Broadway to Saunders (1,100 of 8") | $65,000.0 | $10,000 | | | | | $75,000 | New Project |
| 23 | 500 block of Boehne Ave., Replace old 2" main and service change-overs (600' of 6" and 1,400' of 8" on Claremont) | $44,000.0 | $7,000 | | | | | $51,000 | New Project |
| 24 | Ruston Lane and Hwy 57, Tie-in Main on Ruston to Main on Hwy 57 (150' of 12") | $8,000.0 | $2,000 | | | | | $10,000 | New Project |
| 25 | Replace Main On Frey Road North of Broadway (2080' of 8") | $130,000.0 | $20,000 | | | | | $150,000 | New Project |
| 26 | Covert Avenue (Shoshone, Pollack & Fuquay) 8,100' of 12" | $305,000.0 | $46,000 | | $45,000 | $25,000 | | $421,000 | No Action |
| 27 | Extend Main to serve the 1800 and 1900 Blk's of S Werner | $44,000.0 | $7,000 | | | | | $51,000 | New Project |
| 28 | Extend Main to serve Saunders Ave East of Werner and the 1800 Blk of S Craig | $25,000.0 | $4,000 | | | | | $29,000 | New Project |
| | | | | | | | **Distribution System Total** | **$11,300,000** | |

Prepared by
HNTB Corporation
February 19, 2007



Cause No. 43190
Exhibit CG-3